THE

NEW ENGLAND

Journal of Dentistry

AND

Allied Sciences.

Vol. I. SEPTEMBER, 1882. No. 9.

SOCIETIES.

IMPARTIAL IMPRESSIONS FROM THE MEETING OF THE AMERICAN DENTAL ASSOCIATION, AT CINCINNATI, AUGUST 1-4, 1882.

If we shall have at heart anything but the good and progress of the profession, and if we had any personal interest in what dentists as a body do, we would not say a word about the meeting; but as we are a perfect outsider, with no likes and dislikes as far as business is concerned, we hope that these remarks may be taken for what they are intended to be—notes of a reporter, given for the best interest of the profession as a whole.

The meeting was one of the few in America where we could not find that idiotic division into democrats and republicans. Politics were completely, and personal spite almost entirely absent; but there was present a good healthy discordance of opinions, which insured interesting proceedings. The battle-cries of Here, Guelphs! Here, Ghibellins! Here, Believers! Here, Knowers! were heard many times, and the partisans of the respective ideas rallied around the banners. Very strong, we might say exceptionally strong, is the old guard—men who have become gray in practical work, who have nearly half a

century of experience to rely upon; the old guard is truly of the type which is never conquered, which only dies. Though not quite a representative of the old guard, foremost among them is W. H. Atkinson. He is the truly fighting member of the society; he never has ceased to learn; new ideas find hardly a warmer supporter among the youngest members than in W. H. Atkinson. When he rises up, divests himself of his superfluous coat, to give his enthusiasm free range, and then with an astonishing strength pours forth his ideas—sometimes perhaps in a rich garment which makes it difficult for less enthusiastic mortals to recognize the truth clad in it—all listen, all are carried by the ardor and the love of truth which every one, even he who does not understand him, sees and hears in his words and actions. Without Atkinson, a meeting would seem to us to lack one eminent factor —enthusiasm. Quite different from him is Dr. George Watt, the editor of the Ohio Journal. While sitting at his table, taking notes, he appears very quiet, very calm, not showing much excitement; but let him rise, and a smile will pass through the assembly. They know that sharp, clear and witty sayings may be expected. He is one of the clearest and most precise speakers at the meeting; one knows what he means to say, and one of the reasons that his opinions meet with either stronger approval or stronger opposition than those of others, is because you know what you have to accept or what you have to oppose. His tall, square build and measured movements inspire confidence. He has been at many meetings and fought many battles, there is no doubt.

A very influential member of the meeting is Dr. W. H. Morgan, of Nashville, Tennessee—a portly gentleman, with deep, piercing eyes. His experience and long practice are hard to stand against; with him, one gets the impression of deep, pious convictions, which are allowed rather greater sway than our perception of facts would seem to us to warrant. His convictions are easily touched and aroused.

Another of the most active older members of the meeting is Dr. T. L. Buckingham, of Philadelphia. He took part in the discussion of almost every subject, but just with him the unfortunate acoustic circumstances were more felt than with any other. The size of the hall on the top of a hill, open windows, an organ practising in the basement, rendered the hall extremely inacoustic. Several of the older members seemed to be slightly troubled by defects of the ear. This, added to the unfavorable local circumstances, produced a great number of misunderstandings. As a consequence, if the listening members of such a

meeting do not hear clearly what a speaker says, they become distracted, engage in private conversation, etc. This in its turn again does not increase the audibility of the speaker; the president's gavel is heard—by the way, hardly too often—and thus we were so unfortunate as not to understand one-fifth of what Dr. Buckingham said. He seemed to suffer the same difficulty of not hearing clearly the preceding speaker, as some answers showed. We do not doubt that much valuable truth and information was blown through Highland House Hall over the Ohio valley without reaching the ear of those for whom it was intended. There were some excellent listeners in the whole assembly, and without a good listener there is no good speaker; and to them a good deal of the success will always be due.

"Modest" Chicago sent Dr. ALPORT, to be represented in a worthy manner. He is a practical Westerner, and does not talk much about theories and metaphysics. He has a slight sarcasm, always pleasing, in the corners of his mouth. Of course, all the ages are represented at the Congress, but those above the middle age seem to be prevalent.

Coming to the younger group, we meet a "Doppelgänger" of the President of the U. S. in Dr. W. C. BARRETT, of New York. He is an excellent presiding officer, with a good voice and strong hand for the gavel.

Dr. H. A. SMITH, the president of the meeting, a slightly gray gentleman, with a gray mustache, but without the conventional heavy beard, gave to the Association a good business president, who does not lose his self-possession.

Dr. C. N. PEIRCE, of Philadelphia, wears the peculiar soft, well-cultivated hair one expects among favorable surroundings. He is one of those who talk to the point. It is really pleasing that the Society has a great number of such members. The tendency not to talk to the point is not very great, at least not among the middle-aged, practical men. That leads us to Dr. CROUSE, of Chicago, the most business-like man of the meeting. He might be mistaken for a Maine Yankee, but he is not, though every word he says is business, and you hear it; he has a clear, ringing, fine voice, that sounds like a bugle for the charge.

Dr. G. F. FRIEDRICHS, of New Orleans, who was acting as presiding officer during the morning session, is also a speaker who means business when he says something. Under circumstances, the office of a president of a meeting has seemed to us quite difficult.

Dr. KULP might be suspected to be a rich financier of Europe. He has the typical bodily development of such an one. He might walk

any time into the Exchange at Paris or Frankfort, and never be asked his card of admission; and yet he speaks clearly about teeth and the dental schools, and not at all about the Suez shares or Chic. & N. W.

Dr. W. H. DORRANCE, of Ann Arbor, is a modest man, who knows more than at first sight you might think. He seemed to surprise the meeting by the many good things he had to say Friday. They did not know that so much was stored up in a gentleman who never, when the subject of dental pathology was up, spoke about mythological problems belonging so very fitly (?) to the subject.

Dr. F. M. ODELL is not yet old, and one of the working men of the Association. "One of my pupils," says W. H. A. Well, he has reason to be proud, indeed. Dr. Odell said truly: "All we know is empiricism, and nothing but empiricism." The only trouble is, that the word has assumed a wrong taste, making it often identical with quackery, while it really means nothing but experiment and experience.

It seems to us that the younger men in the Association did not take part in the meeting as they ought to have done. A hunters' saying is: "That dog will be the best who the earliest engages in fight with foxes and is bitten the most." From that stand-point, nothing is as good as a slight defeat when young. It gives you a warning where you are weak, and time to remedy. We are sorry that so few of the younger members showed themselves as speakers in the meeting.

Dr. RAWLS, of Lexington, with Southern courage, drove his opinion into the camp of the enemy. He is as fine a speaker as any, full of enthusiasm and dash; and, aided by a good voice and personal appearance, he sooner or later will become prominent among the profession.

Dr. MORGAN, Jr., of Nashville, the very copy of the father, only about thirty years younger, is an excellent listener, but we would not venture to say that he is not an excellent speaker.

Another professor of Vanderbilt University, at Nashville, Tenn., Dr. STUBBLEFIELD, was taken sick the second day, and, though granted the privilege of the floor, could not take part in the discussion.

Among the quiet but very effective members of the meeting, was the secretary, Dr. GEO. H. CUSHING, of Chicago—a gentleman of majestic appearance, strictly attending to business.

In Dr. TAFT we had one of the sharpest speakers. He enjoys quite a straight upper lip.

Last, not least, Dr. L. D. SHEPARD, of Boston, of as great experience, practical skill and clearness of language as any member in the meet-

ing. Very few show such enthusiasm in their profession as the D. D. S. from Boston.

While, as far as persons were concerned, the meeting of the Congress showed an immense amount of learning, experience and debating skill; as a whole, it struck us that the business done by this large gathering of knowledge did not come up to the forces engaged in it. The great difficulty with some of the most influential men seems to be to talk to the point and to submit their opinions for a moment to that of the more managing members. Some subjects took an immoderately large amount of time, while others had to be slurred over from lack of time. The very unimportant nomenclature occupied an entire meeting, just as the almost hopeless subject of dental education; but pathology, histology and physiology were crammed out of their respective importance by some speakers soaring off into metaphysics without sufficient provocation. Dr. Atkinson truly said, after the second afternoon session: "If we talk about these things at a small private meeting, where there are not more than five, we may come to a satisfactory agreement; but to settle the matter here, is a hopeless attempt." The subject of helping certain investigations by financial aid required one entire session, without the amount of money warranting such an abundance of words. Many members of the Association seemed to us in this point to consider this Association a savings institution rather than a scientific body. What will the Association do with money, if not use it for scientific purposes? We do not think the sum of $200, for investigating the "cause of caries," will prove a great stimulus to an investigator. He must have at least $20,000 worth of self-denying power and love for truth to offset the small amount of hard cash he is likely to get; but a little he will always want and like.

At the last meeting Dr. GODDARD, the new president, was installed. If ever age gives venerability, we have a representation of this in the president of the next meeting. His white hair and flowing beard show wisdom gathered during a long life.

To offset the acoustic disadvantage, the meeting enjoyed a hearty hospitality. An organ concert, in Music Hall, which imitated the roaring thunder-storm with a strength we never heard before, got the approval of the rain-making forces so that they furnished gratis the rain to the thunder-storm; both coincided so marvelously, that it shows strikingly how chance-coincidences will occur. The concert was followed by a drive through Burnet Woods for those who had not yet

been there. We saw the cottages of all the coming presidents in the U. S., from number 1-50.

Thursday evening, August 3, a banquet was given at the "Zoo," as the slang at Cincinnati calls the Zoological Gardens. More speeches, more hospitality. Never any speaker gets caught as badly as in being forced to make an after-supper speech. Oh, if only all of us had those inspirations by the presence of the ladies, of which Dr. Atkinson can boast! The local doctors did everything to make the city agreeable to the stranger.

The strong voice and graceful movements of Dr. Goddard at the "Zoo"—there was dancing at 9 P. M., the new president showing off very favorably among the fair sex—indicate that the forces of life have not been squandered during his long life career.

Twenty-Second Annual Meeting of the American Dental Association,
At Cincinnati, Ohio, Aug. 1, 2, 3 and 4, 1882.

[NOTE.—We were not represented the first day of the meeting, hence have to take the report of it from the Cincinnati Gazette, which report the secretary, Dr. G. W. Cushing, declared excellent at the morning session of Wednesday, Aug. 2d. For the sake of completeness, we copy it with but few changes.]

FIRST DAY—TUESDAY, AUGUST 1, 1882.

MORNING SESSION.

Dr. H. A. Smith, President of the Association, presided, and Dr. George W. Cushing acted as secretary. The officers of the executive committee were well represented. Following is a list of the permanent members and delegates present:

Otto Arnold, W. D. Kempton, J. R. Callahan, Mississippi Valley Association of Dental Surgeons; E. G. Betty. J. H. Boger, Ira Brown, C. H. James, J. Williams, C. J. Kelly, W. P. Horton, George Watt, Ohio State Dental Society; C. A. Pierce, E. T. Darby, Pennsylvania State Dental Society; A. W. Harlan, G. H. Cushing, J. M. Hurtt, Jos. W. Cormany, K. B. Davis, Illinois State Dental Society; W. W. Evans, Washington City Dental Association; Geo. J. Friedrichs, New Orleans Odontological Society; W. H. Truman, T. L. Buckingham, Pennsylvania Association of Dental Surgeons; S. B. Brown, P. G. C. Hunt, Indiana State Dental Association; J. A. Robinson, George R. Thomas, E. C. Moore, W. H. Dorrance, Michigan State Dental Association; T. C. Leiter, Frank Waldron, J. G. Templeton, Gale French, Northern Ohio Dental Association; C. M. Wright, A. G. Rose, G. W. Smith, O. V. Heise, Cincinnati Dental Association; W. H. Eames,

Missouri Dental College; J. N. Crouse, Chicago Dental Society; H. Cowie, Detroit Dental Association; H. W. Arthur, Odontological Society of Western Pennsylvania; W. N. Morrison, St. Louis Dental Society; J. G. Harper, A. H. Fuller, G. L. Shepard, Wisconsin State Dental Association; Wm. H. Atkinson, New York; W. H. Morgan, Nashville, Tenn.; H. J. McKellops, St. Louis, Mo.; Geo. W. Keely, Oxford, O.; C. A. Barrett, Buffalo, N. Y.; F. H. Rehwinkel, Chillicothe, O.; L. D. Shepard, Boston, Mass.; H. J. Smith, Cincinnati, O.; W. H. Findenberg, Pittsburg Dental Association; W. C. Wendell, B. G. Marklein, Wisconsin State Dental Society; D. J. Pollock, Sterling, Ill.; S. A. Garber, Iowa State Dental Society; G. F. Nevins, of Indiana State Dental Association.

The session was opened by Dr. Wm. H. Morgan. On behalf of the dental profession of Cincinnati, Dr. A. BERRY, of the city, delivered an address, in substance, as follows:

The partiality of his brethren had imposed on him the pleasing duty of welcoming them to the Queen City. From the position of the city, the center of the population of the country, it was convenient for conventions to meet here, and it was fast acquiring the name of the city of conventions. Much of the progress of the dental profession was due to American dentistry, whose preëminence was acknowledged the world over. It was not to be forgotten that the greatest discovery in modern times in surgery—anæsthesia—was a discovery of their profession. During the sixteen years which had elapsed since they held their annnal convention here, the dental societies and dental colleges of the country had more than doubled their number. While in these years all other departments of science had made important advances, the dental profession had perhaps outstripped them all. This was formally acknowledged last year by those best able to decide. The American Medical Association and the International Medical Congress had recognized dentists as belonging to the fraternity engaged in the practice of the healing art. Cincinnati was recognized for its steady improvement in public enterprises. Here had been founded the second dental college in the world, and here had been organized the Mississippi Valley Dental Association, which for more than a score of years had been the oldest dental society in existence.

Dr. C. W. BARRETT, of Buffalo, N. Y., on behalf of the Association, was requested to make the response. He said they had all heard of the enterprise and the greatness of the city. But although admiring this, they had come for a different purpose—that of welcoming each other in the name of dental science. Nor did they come as stran-

gers, for everywhere there was a brotherhood among men of intelligence, and those in honest pursuit of the truth.

Drs. Field, Buckingham and Taft were appointed a committee to draft suitable resolutions on the death of Dr. D. Hawxhurst, who was formerly a member of the Association, and who died in Paris last winter.

On motion of Dr. Barrett, the secretary was instructed to send the sympathies of the Society by telegram to Dr. Marshall H. Webb, Lancaster, Pa., who is lying dangerously ill.

Drs. Crouse, Shepard and Pierce were appointed a committee to draft resolutions on the death of Dr. M. S. Dean, of Chicago, Ill.

On motion, the amendment to the constitution offered last year by Dr. Shepard, was adopted as follows:

To amend Article IV. of the constitution so as to make the present article Section 1, and to add a section, as follows: Section 2. The officers may, for extraordinary reasons, change the time and place of meeting upon the written consent of ten of the fifteen officers.

Afternoon Session.

This session commenced at 2.30 o'clock, with President Smith in the chair. By this time over one hundred delegates had arrived, and with the representatives of the profession from the city, and the visitors, the attendance was about 150.

Dr. H. A. Smith, President of the Association, read the annual address, which presents the following points:

During the past year they had to record the death of one of their most valued associates—M. S. Dean. His death might not, perhaps, be regarded as an irreparable loss, yet when they remembered his genial, plain and generous nature, his cheerful and animated conversation, the variety of his attainments, the extent and accuracy of his professional knowledge, coupled, as it was, with the modest self-estimate and humility of mind so characteristic of him; when they referred to the valuable contributions from him which graced the pages of their transactions, and added to the bulk of their real knowledge; recalling the great love which he bore for the Association, as manifested in the ever-watchful guardianship of its interests, whether a humble worker in its body or its honored president, surely the place in their Association made vacant by the death of Dr. Dean would be a difficult one to fill. In his address last year, the president had called attention to the fact that etiology—the sciences of the

causes of dental caries—had been almost wholly neglected by essayists who had contributed to the proceedings of the Association, and suggested to the section embracing etiology that a committee be appointed for the object of making a careful, systematic study of the causes which contribute to the existence of dental caries. When it was considered that much the larger proportion of their time spent in actual practice was occupied in the treatment of lesions caused by the almost universally prevalent diseases, which were denominated dental caries, and that notwithstanding the subject had been extensively studied, the fact confronted them that the efficient cause of dental caries was still a matter for speculation. It was noteworthy, as well as encouraging, that the subject received so large a share of attention before the section devoted to the consideration of diseases of the teeth at the International Medical Congress, held in London last year. With the view of stimulating investigation in this direction, he would respectfully suggest that the Association offer a prize to members, of not less than $200, for the best paper based strictly upon original investigation relating to etiology of dental caries, the award to be made and announced at the annual meeting in 1884. If there was any deficiency in the treasury for that purpose, it might be met by an increase in the annual membership fee, or the whole amount may be made up by voluntary subscriptions of the members. Whether dentistry should be taught in special colleges or in a regular university course with other studies, was a matter that might safely be left to time, the great arbiter of all things.

Reports of the different sections were called for, but in every instance the chairman of the respective committee urged some reason for not being quite ready to make a report, until section three, which came last, was announced. The chairman, Dr. W. H. Atkinson, of New York, said he was ready to read a paper on "Dental Literature and Nomenclature."

Dr. ATKINSON is a veteran in the dental profession. His reputation stands the very highest, and he is said to be well versed on every subject connected with the science of medicine. He practiced in Cleveland many years ago, since which time he has been a resident of New York city. He has a venerable appearance. His great piercing eyes show depth of thought and clearness of mind, and the expression about his mouth and the general lineaments of his face would indicate a strong character. He wears a long beard, nearly gray, and his hair hangs down to his shoulders in poetic fashion. Dr. Atkinson is

considered by some of his confreres to hold eccentric views on certain subjects.

In his paper, he endeavored to explain a new system of language, based on the supposition that all languages were one and the same. He explained the meaning of two words—banski and vanski—the former referring to organic esmology, the latter to inorganic esmology or biology. There were eight divisions of biology according to the eight vowel sounds. He also took the ground that every tone of the human voice corresponded to a tissue of the body. As he closed his remarks, he said: "I hope the time will come when not a dog will wag his tail against God's elect truth."

Dr. FRIEDRICHS asked the essayist how it was possible for every tone of the voice to correspond to a tissue of the body. It was against all recognized authorities on the subject.

Dr. ATKINSON replied that second-hand cheese was sometimes moldy and sometimes maggoty.

Dr. FRIEDRICHS replied, universal language could only be found in music.

Dr. GEORGE WATT moved that the paper be referred to a committee of three for consideration.

Dr. REHWINKEL wanted to know how long life is, to waste it on such a subject. What was the use of dentists trying to build up a new language? Year after year Dr. Atkinson had tried to tear down all languages, but nobody understood him. The Doctor might call him a blockhead, or anything else, but he would acknowledge that he had not understood one word of what he said.

Dr. WATT explained his motion. He had always been a great friend of Dr. Atkinson. Still the Doctor's subject had been purely philological; it had not been on dental nomenclature. The Society for the last four years had not been benefited by the discussion. And now came a continuation of the subject with the same animus. There was not an original thought in the paper. The thoughts were the vaporings of Stephen Pearl Andrews. Hence, he had put his motion to appoint a committee in order that it might be decided whether the Society records should still be burdened with such useless matter. He did not care what the committee would do, whether they decided to send the essay to the Patagonians, or whether they bound it in morocco or calf—calf would be better—or contributed it for the enlightenment of the people, so long as they disposed of it. Perhaps it would be better to send the paper back to its origi-

nal author. However, under no circumstances could he be tortured into any feelings of disrespect against Dr. Atkinson. He was a great man, but the subject matter was entirely irrelevant to the object of the meeting. Should it be decided to put the paper on record, he would be pleased to learn every word of it by heart.

Drs. ROBINSON and HUNTER took different sides, and sympathized with the essayist.

Dr. BARRETT regretted that such unpleasant discussions should occur, and moved that the whole subject be dropped.

It was finally decided to refer the whole subject to a committee of five—Drs. Keely, Friedrichs, Odell, Rehwinkel and Peirce—to be reported on the following morning.

Dr. CROUSE remarked that Dr. Atkinson had not been treated fairly. It was improper to make fun at the expense of his report.

Dr. WATT said that Dr. Atkinson was building a man of straw, and he trying to demolish it. The committee would still be under the control of the Association.

Dr. ATKINSON said he had been the only chairman of all the sections called who had come prepared. He had been honest, and, as far as ability was concerned, he offered to cope with the best of them. He was a believer in immediate inspiration.

Dr. REHWINKEL asked the question: "Through what mediums did you get your inspiration? Was it an angel on a white cloud or on a dark cloud?"

SECOND DAY—WEDNESDAY, AUGUST 2, 1882.

MORNING SESSION.

The session opened at 10 o'clock, at the Highland House. Dr. H. A. Smith, President of the Association, occupied the chair, and Dr. Geo. W. Cushing acted as secretary. The following additional delegates were reported:

D. J. Pollock, Illinois State Dental Association; Jos. Bauer, New Orleans Odontological Society; G. F. Nevins, J. E. Cravens, John R. Clayton, John B. Morrison, Graham A. Wells, Indiana State Dental Association; E. C. Moore, Michigan State Dental Association; R. C. Morgan, Wm. H. Goddard, C. E. Canine, A. Wilks Smith, W. M. Garnett, Kentucky State Dental Association; S. A. Garber, J. P. Wilson, L. C. Ingersoll, Iowa State Dental Association; H. W. Morgan, R. R. Freeman, Tennessee Dental Association.

On motion of Wm. H. Goddard, it was

Resolved, That from and after this date, the treasurer of this Association be required to give such bonds as the executive committee (of the second division) may deem to be necessary for the faithful discharge of the duties devolving upon his office, and his predecessor shall not surrender the funds, books or papers until he is informed by said committee that such bonds have been executed.

The privileges of the floor were accorded to Prof. Stubblefield, of Nashville, Tenn., and Prof. Chas. Mayr, of Springfield, Mass. Prof. Stubblefield was not present at that time.

Prof. MAYR thanks the Association for the honor. When he first commenced to study chemistry, as applied to dentistry and dental physiology, he heard much of lime-salts being dissolved in caries, etc., but a short time ago he made most careful experiments, and found that they were not dissolved. This little fact shows the necessity of careful chemists furnishing reliable bases to dentists who do not and can not have time to make difficult, delicate and time-absorbing chemical experiments.

SECTION IV. Operative Dentistry is called.

Dr. W. N. MORRISON :* During the whole course of his professional life, he had only made one mistake in regulating teeth. In that case, the patient never developed to normal size ; small in stature, diminutive in physique, with large, good teeth in a small mouth, he was free to admit that she would look a little better with that part of her anatomy less prominent. But look at the thousands of cases to the other extreme ! The public were clamorous for deformed mouths ! The first demand was to have all teeth extracted, and have all artificial, little, narrow, white teeth ; second choice, about the half of their teeth extracted, to improve their appearance and keep them from decaying ; and, thirdly, to have the crowns of the remaining teeth horribly mutilated by filing and grinding. And it was a disgrace to the profession that there were so many claiming to be progressive dentists, who yielded to the demand and practiced their requirements. A few months ago the public and a few silly snobs through the press went into ecstacies over Patti's small mouth and beautiful teeth, while in reality it was a deformity—teeth irregular, one canine so much out of the arch that when she cast a bewitching smile, her lip sometimes caught upon it, and it was with some difficulty that she could get it down. Her profile had that sorrowful, dinged-in appearance, so common at this time. Several years ago the papers had given an account

*We are partly indebted to the Cincinnati Gazette for the extracts of this paper. We suspect Dr. E. G. Betty, of Cincinnati, as the author of these excellent extracts.

of the selection of a characteristic American female head, by the designer of the new silver dollar, that should accurately represent the correct type of American beauty. He did not know the lady, nor her dentist, nor did he have any information in regard to the condition of her teeth or articulation, but, seeing her face upon the few dollars which had passed through his hands, he would venture the assertion that her mouth did not contain thirty-two normally-formed teeth. In treatment of cases, the great difficulty was to control the patients and parents. Teeth were easily moved if the force be applied in the right direction, but they as easily returned to their old places. He, therefore, had decided objections to all of the complicated apparatus, and these were obviated by his system of regulating with screws and levers and rubber ligatures, which were secured to the teeth by thin annular bands or ligatures of platinum, cemented to the teeth with oxophosphate of zinc, where they remained until the operation was entirely completed.

Dr. W. H. ATKINSON: I am sorry to see a disposition of members to form an admiration society; but, with very few exceptions, I never have heard a paper of that length containing so much valuable information. That the screw should ever be used in moving a tooth I do not acknowledge; I rather controvert that; but it is true that the force must be in that direction in which we wish to move a tooth. A very slight force, continually kept up, is sufficient to perform the work in a short time, which otherwise it would require a year to do. I found that the idea of touching a tooth when it is tender is so uncomfortable to me that I wish to express myself about it. If you move the tooth slowly, say by $\frac{1}{200}$ of an inch every time, it is the same as taking a candle and tapping your shin with little blows until it gets sore. If you hit once with force you will not be hurt much by the candle, but these repeated blows will make themselves felt. The same is good in moving teeth; to move them comfortably, they ought to do in months what they used to do in years. In the vast majority of instances where the teeth are in occlusion, you need no silk ligatures, and you will be free from the opprobrium of severing the gums. The prime influence is to get control of your subject, but not to get a Satanic influence. (He shows specimens of plates. The plates have rubber rings attached to a ring of platina and iridium wire. The case shown was regulated in thirteen days. The patient had got advice to have the occluding teeth extracted)—"never worse advice came from the bottom of the pit!" Do not think that I recommend these

things because I am an old man and foggy; I am the least foggy of the lot! and I wish you to have the truth.

Dr. C. N. PEIRCE: With all deference for Dr. Atkinson, these appliances may do for some teeth, but you cannot use the same plate or form of pressure for all mouths. I do my share of regulating, and know that the application of a plate varies with the patient.

Dr. SHEPARD: I would like to ask Dr. Atkinson one question. He said that the plate remained in the mouth till two or three weeks ago; hence, according to his statements, about six weeks. How many times was that plate taken out and removed for cleansing?

Dr. ATKINSON: Never once.

Dr. SHEPARD: Were the elastics always the same?

Dr. ATKINSON: The same; except one broke where a loop was drawn and tied tightly to increase the tension.

Dr. SHEPARD:* I wish to make one remark. Any appliance for regulating teeth which cannot be removed and cleansed is not a skillfully made appliance. It seems to me that cleanliness, in the matter of regulating, is one of the most important points which we should keep in view. Plates can be made which will accomplish this very thing, which can be removed by the patient after each meal and cleaned by the patient and put back. I have plenty of these appliances which I should like to show, but I wish to state that in the great book of Kingsley, on Oral Deformities, in two hundred pages, about three lines in all are devoted to the idea that cleanliness is essential. The use of appliances for two months, without cleansing, seems very dangerous for the health of the soft tissue as well as for the teeth.

Dr. ATKINSON: All I have to say in reply is, that I will pit my patients against any for cleanliness of their mouths.

Dr. MCKELLOPS (showing a plate):* This thing alone is worth to me thousands of dollars, and I think this box represents the manner of regulating the teeth in the simplest form. My little boy, of twelve years, had one made in London, by Dr. E. Coffin. The lateral incisor was inside the arch. He went on ship-board, and took it out and put it back again, and when he came here the tooth was regulated; the child did it all himself. I saw the records of 2,500 cases regulated by Dr. Coffin, of London — split-plates — at the time he was making the plate for my son. I saw nine cases at the office. These cases were exhibited before the profession at London. The whole arrangement is very simple; thin piano-wire

*Essentially verbatim.

is the chief factor in exerting the pressure. First, an accurate impression of the mouth is taken with gutta-percha; the gutta-percha is heated in hot water and then chilled superficially by a short immersion in cold water; the impression is taken, and the plate hardened by immersing it long enough in cold water; the ends of the steel wire are made flat and tinned. After the plate is vulcanized with the spring, and fits to the mouth, take a little saw and saw the plate in two (of course leaving the V-shaped spring entire). Then I put it into the mouth and let the patient wear it a couple of hours. After this, you open the spring a little, and any child can wear the plate with perfect ease and comfort. You will be astonished to see with what rapidity you can do it. You may use any amount of ligatures, but the whole success is in the manner—in the relief it gives to the parents. It is bad if they see the child tortured. These plates can be kept perfectly clean. I was told by Mr. Shepard that they used these plates at Boston ten years ago. If they did know it, they kept it under a bushel. I wish further to state the case of a lady in St. Louis. The right lateral incisor was turned so that its face touched the posterior side of the front teeth; the teeth were crowded. I stated the case to the lady, that it would be necessary to regulate the tooth; the teeth were yellow, hard, firm teeth—very strong for a woman. I concluded it would be better to take the tooth out, and thus I stated to the brother; but they would not consent, and so they put her to a dentist near by to regulate the case. After some time, the two second bicuspids were extracted; he went on; then the next two; a short time afterwards the two front teeth were gone; it was all from the pressure of the plate. (Showing a regulating apparatus.) This apparatus is from Dr. Patrick, of Illinois—a gold and platinum bar, reaching round all the upper teeth. This bar is fastened to the bicuspids or molars by platinum bands. You may slip the regulating clasps over the whole bar, and thus move any tooth you like. These are made for the benefit of the profession, and sent as a present to our distinguished secretary (G. W. Cushing) by Dr. Patrick.

Dr. NOEL:* Dr. C. O. Taft, of this city, is making vulcanized rubber plates to cover the molars and bicuspids, so that in shutting of the lower jaw it would drive the plate up. Then he called attention to cutting slots in the plate, and putting blocks of wood into it; the swelling of the wood carries a tooth rapidly forward; this can be removed rapidly. A few days ago I had a case where the bicuspids

*Extract.

were just erupted, and the molars so short that I could not make a plate firm enough. I could not use the blocks of wood any further, so I made a block of rubber, a little larger than the wooden blocks, and clasped it by a silk ligature through the rubber, tying it so as to act on the teeth I wished to move. I have the model of a young man, of twenty-five years, before and after treatment; he was transformed into a good looking man from an ugly patient with a gorilla expression.

Dr. McKELLOPS: I never met with more hospitable men than the English dentists. They treated us with everything they could do from the time we got into port; they opened us their houses from cellar to garret. Such men as Turner, Roberts, Tomes, and a host of others too numerous to name, opened to us their houses. You had hardly time to attend the meetings. They studied from night till morning.

Dr. SHEPARD:* I rise to give indorsement to Dr. Coffin's method. Ten years ago Dr. Clapp, now of Boston, was for six months in the employ of Dr. Coffin, and he brought back the plates; during the past ten years they have been used in Boston. Two years ago last May, at the meeting of the leading society at Dr. Kingsley's office, at New York, I exhibited, with other things, Dr. Coffin's split-plates, and I have used them extensively, but never so that I thoroughly appreciated their value or great variety. In London we had opportunities to see hundreds of cases at the office of Dr. Coffin. The articles of Dr. Walt. Coffin have been published extensively in Great Britain and this country. The credit belongs to Dr. Coffin. J. D. White had a plate which is illustrated in Kingsley's Oral Deformities, but of so different construction and so different in application that it is hardly an invention in the same direction. I have the habit of dipping the springs in tin, and to make the tin adhere, I dip it previously in a solution of chloride of zinc. But it is not necessary; the oxydization in the mouth is not very great—in some mouths, more; in others, less. The wire becomes blackened on the surface with shining scales, but remains smooth.

Dr. FIELD:* I have not supposed to find a paper of that interest, and I have been paid for my presence. I had heard of the Coffin plate, but never saw it before. It will prove a matter of great importance and usefulness to the profession, and it will be a lesson to the brethren at Boston, when they have something, not to keep it for themselves.

Dr. E. T. DARBY:* In capping molars it is very necessary to pay attention to the fact that if we cap one the others will elongate, and

*Essentially verbatim.

you will have a lack of fit in the jaw. I demonstrated this to my own satisfaction. When I found in a little patient the lower teeth crowded in the gums, it occurred to me that by elongating the teeth I might remedy that. I made a suitable capping one-sixteenth of an inch, and let the patient wear it for six months. The molar teeth had elongated one-eighth of an inch. I made another cap plate one-eighth of an inch more, and let it wear another six months; the molars and bicuspids had elongated one-fourth of an inch. Then I commenced to draw the inferior teeth backwards; this could not have been done because the occlusion was on the palatal surface. You must cap everything. If you ask how I hold the teeth after they are crowded out, I shall tell you that I use rubber or celluloid. I let the capping run over the molars and leave a little opening for the chewing surface; then I make a little band on the labial surface, and this will hold the teeth in very firm position.

Dr. C. R. BUTLER:* All the theory that Farrar gives, and which is now going through the journals with many illustrations, is very nice on the paper, but practically it is good for nothing only in very limited sense. I have had considerable experience in work of that kind, but I find that one set of appliances will meet some cases, but will not do for others. Dr. Atkinson has a form of plates that can be applied in many cases, but you have no cast-iron molds to make cases perfect; but the process of Dr. Coffin, I conceive, will cover more ground than any other method presented to the profession. It is the least expensive, but no bungler, I care not how nice he may work, can do it successfully; it requires skill. It seems to me a very important item that the plate can be removed by the patient and the mouth cleansed. Another good point of this method seems to me that you have points of leverage. One of the most difficult things is to hold the teeth so that they become fixed after they have been moved; hence, the point described by Dr. Darby seems to me quite essential.

Dr. DORRANCE: I would warn against using too large wire. Small steel wire will accomplish a great deal; but with large wire the result is accomplished with injury to the tooth. That might be avoided. The same caution is to be observed in the springs; small wire is better than large.

Dr. MCKELLOPS: It is not supposed that the patient himself does the regulating in split-plates. The patient wears them some time before they are opened, then the operator opens slowly.

*Extract.

Dr. G. W. KEELEY:* Some twenty years ago a girl of nine years of age presented herself to me with the centrals erupted and inside the lower ones. The first time I made a plate covering the temporary molars, with a band in front, making two little ligatures over the refractory incisors and attaching it to the rubber. This plate was put in at four o'clock in the afternoon. After supper the girl called again; I put in soft rubber ligatures; next morning she came again; I removed the plate and the work was done. I put the plate in again and tied the teeth with number 40 cotton, with the instruction to wear the plate all day and night. To-day I would simply use a plate covering the teeth moved, with a slot, and insert a piece of sea-tangle. Dr. Morrison does not say he recommends extraction of the six year molar. So do I; but if the first molars are extracted prior to the eruption of the second molar, these generally come forward so nicely without tipping that it is impossible to tell they are not the first.

Dr. PEIRCE: I find that economy in time and simplicity in an appliance are very desirable. Suppose we have a case of a superior lateral incisor on one side, or on both sides, encroaching on the palatine surface, or all four of the superior incisors encroaching and striking within the lower teeth. Often I have moved them, starting with the lateral incisor on the left side, drilling a small hole at the palatine surface, and in the six year molar I drill a small hole; I insert thick platinised wire in the lateral and molar. It is out of the way of the tongue because it corresponds to the form of the tongue. These small openings are readily filled and will not decay easily. I always keep on hand bars of platinised gold plate, about No. 24. I have often made the same appliance on both laterals at the same time, and placed them across each other. The leverage is sufficient to press a lateral out without changing the position of the molar.

Dr. CROUSE: A case of malformation. I made the contract that if I would not make it good, I would not charge a cent. I do not do so generally, but the father was a sharp business man who had paid much for nothing. He had to pay more for making the bargain beforehand. I would advise if a patient can pay, let him pay, because I think the operator is more responsible than any other man. In many cases the teeth are destroyed because they cannot be cleaned, and every regulating apparatus can be made so that they can be taken out and cleaned. Here I had to move the upper teeth about one and one-half inches. The upper arch was very narrow; the young man was

*Extract.

large every way, but for the small arch. I did it with rubber plate and jack-screws, but I had to apply two jack-screws; he would break them by the force required. It was a year before I finished the case. The old man did the work and I did the advising. I can regulate better when I get pay.

Dr. G. B. MARKLEIN: The method of the split-plate seems to me a very efficient means for expansion of the arch. I would like to ask some if it is applicable in drawing teeth backwards. It has always been to me a matter of slow work—retraction by silk ligatures.

Dr. MCKELLOPS: The plates answer the same purpose; springs clasping around at the outside may be imbedded and suitably bent.

Dr. MARKLEIN: I have the case of a young lady with the upper teeth all projecting one inch over the lower, giving her a very strange expression; the second molars are sound and in place. I would like to ask what appliance would answer best to draw back these teeth so as to get them in their regular place. The only anchorage in this case are the superior second molars; the other teeth must all be drawn back, and I would like to know if the support of the two teeth is sufficient to make the appliance; I am afraid that the molars will come forward while the others go back. Ten teeth have to be moved, and only two to anchor.

It was suggested by several members that this might be done by first moving the bicuspids back and thus one by one moving the rest.

Dr. MORRISON: It was 1865 that the Coffin plate was brought from Europe.

Adjourned till two o'clock.

AFTERNOON SESSION.

This session opened at two o'clock.

The committee on resolutions in reference to the death of Dr. D. C. Hawxhurst, reported a resolution relative to the loss caused by his death. The paper was ordered spread upon the minutes.

SECTION 5, on Histology and Microscopy, Dr. Black, chairman, had no report.

SECTION 6, on Therapeutics, had two papers, by Drs. Rawls and H. B. Harlan.

Dr. A. O. RAWLS:* I believe and have believed that we were too enthusiastic, too certain on many things which have been held up to

*Reported in extract.

us as dentists. My subject is *Pulpless Teeth*. Two tissues are more or less intact in pulpless teeth and devoid of life—enamel and dentine; one tissue still existing with possibility of a slight nutrition, the other with the probability of numerous breaks in the channels in the cementum. In cases of alveolar abscess both are usually involved, but exceptionally this does not take place. Aside from this, an alveolar abscess may involve more or less of the periosteum. I believe it is generally acknowledged that there is but one periostal membrane between process and cementum, and that this is attached by prolongations and ramifications of connective tissue. This being true, an inflammatory process may result in abscess which may destroy the connection between the process and membrane, or cementum and membrane. . . A dead pulp presents at some period the condition of a dentulous cyst. . . . Success in the eye of the practitioner is not always success in the eye of the histologist. The demand may be the longest time during which teeth may last in the mouth or be of service to the patient without detriment to the soft tissue. Both imply different degrees of success. It is common that dentists speak of a cure of abscesses as perfect, as if it was in external tissue. This could be only by quick restoration of the lost periosteum; for when false tissue is formed, this not being normally nutrified, will finally break down. . . . Dead animal substance, like dentine, cannot remain in contact with living tissue without affecting living tissue in a greater or lesser degree. . . . Are we not presuming too much of this vis vitalis and recognizing too little the chemico-physical possibilities in our treatment of these cases?

Dr. H. W. HARLAN:* When the treatment of alveolar abscess was up for discussion at the International Congress, Mr. Walt. Coffin recommended hydrogen-dioxide as efficacious in cases where no fistulous opening was established, mentioning that the cavity could be evacuated without coagulation. After some ten months' constant use, I am induced to indorse it. A few points on its preparation: H_2O_2 is the formula. It is not always possible to obtain it sufficiently strong for use. To prepare it in small portions, dioxide of barium is added to a solution of one part of sulphuric acid and five parts of distilled water, taking care that the temperature does not rise above 60° F., and this operation is suspended when the liquid has become only slightly acid. The precipitated sulphate of baryta ($S O_4Ba$) is deposited and the liquid decanted off. It is better to use an excess of sulphuric

*Almost verbatim.

acid. This solution will scarcely ever contain over five per cent. It may be concentrated in the vacuum below 68° F. over sulphuric acid, or by freezing and removing the residual liquid, which is much more concentrated. If the solution be allowed to evaporate over sulphuric acid, it may happen that oxygen is given off. In this case, a few drops of sulphuric acid will prevent further decomposition. The aqueous solution can be kept for months in a dark place. It is easily soluble in ether; this solution is more stable than the aqueous solution, and can be distilled. To determine the quantity, it is only necessary to acidulate the liquid and to drop into it from a burette a solution of potassium permanganate of known strength. In this case, the reaction $2(KMnO_4) + 3H_2SO_4 + H_2O_2 = K_2SO_4 + 2MnSO_4 + 4H_2O + 3O_2$ takes place. Each gram of potassium permanganate corresponds to $\frac{108}{2000}$ of H_2O_2. During the last years, when it commenced to be used more, extraordinary effects were attributed to it. It has been stated that no physician who has applied it in spray in suppuration will ever want to be without it. A spray of two per cent. will render offensively smelling air inodorous; nine parts of urine with one part of dioxide mixed and allowed to stand for nine months did not putrify. Behant (?) and Paul de Bert have found, by a series of experiments, that fermentation caused by living animals is arrested by it, but not that caused by nitrogeneous compounds. It is occasionally stated that the commercial article contains "ten volumes of H_2O_2." This is due to the vagueness which is attached to the meaning: ten volumes. H_2O_2 is a liquid, and ten volumes means that ten volumes of oxygen can be produced from it, which corresponds to a three per cent. solution. Most of the hydrogen-dioxide in the market is a solution of common barium-peroxide in hydrochloric acid. Bronsdorf's product contains three per cent. It must be preserved in small dark bottles. I use this aqueous solution and inject it into the sac of the abscess. A rapid evolution of oxygen followed, and evacuation of the contents. One may see the frothy contents escape if the proper amount is used. It has such an affinity for the contents of the sac that it must commend itself to any one for the task of removing the pus from the apex. I wash first the canal from whence the pus is oozing and then I inject the remedy; then I introduce threads of cotton and seal the cavity. The dressing stays there three days; if there is no more odor, I pack it tight or fill a weak root. In some cases it may be necessary to use the hydrogen-dioxide three or four times in intervals of three or four days. It is always necessary to adjust the rubber

dam in changing the dressing. I prefer the volatile eucalyptol as an escharotic. I venture to suggest that hydrogen-dioxide may become useful as a bleaching agent for pulpless teeth. It is used in arts already extensively.

Prof. CHAS. MAYR: I am very glad to see an agreement of opinions. A couple of years ago I recommended, at the meeting of the Connecticut Valley Dental Association, hydrogen-dioxide as perhaps useful for bleaching teeth. We talked about it, but we had considerable difficulty when we discussed the way how to do it; to include it into the pulp chamber and to seal it up could not be done because the pressure of the oxygen soon would burst the tooth—from the outside it would only act by endosmosis, and very slowly. The question of bleaching teeth cannot be solved before we know what colors them. Not long ago a man asked me to bleach feldspar, as if it was something like bleaching a calico dress; I had to examine what the coloring matter was, and then only I could proceed. Thus, before we know exactly what colors teeth, we cannot bleach successfully; the coloring matter has been supposed to be every kind of things, but to me there is little doubt that it is a modification of haimatine. We need not suppose blood corpuscles to enter the pulp: the serum contains all the elements for haimatine. As often as I hear somebody using the term vis vitæ or vital force, I always am greedy for information; I always wish to know what is meant by it, and I never found any man who would or could give me any sensible answer. It is a vague nothing, an empty word, as far as I have learned thus far; I would like to ask Dr. Rawls what he means by vis vitæ.

Dr. RAWLS: I do not believe in a vis vitæ, as it is plain from what I said.

Dr. INGERSOLL:* I have offered to the profession a series of papers on Alveolar Abscesses and Alveolar Ulceration, and Sanguinary Calculus. I presume that no pulp ever dies without causing disease in the peridental tissue; that is a universal rule. There may be exceptions. The form of disease is various; it may be true alveolar abscesses, it may be chronic inflammation of the membrane, it may be permanent induration of the parts surrounding, it may be ulceration. We often hear in the profession of ulcerated teeth, that is, of teeth having abscesses, and very little distinction is made between ulceration and abscesses. I had a case in which a filling had caused what I had been in the habit of calling alveolar abscesses, but I found no pus-

*Nearly verbatim.

cavity, no openings; I found, one-fourth of an inch from the apex, hard incrustations, unlike salivary calculus, very dark, very hard, much harder than that, but granular in its nature. The thought first occurred to me: Where on earth could salivary calculus ever reach this point, so as to deposit there lime-salts? The gums enclosed almost entirely the neck of the tooth. It could never have got there except by injection. Where did it come from? What were the conditions of its formation; what its source? I did not analyze it, but I am certain that we should not find particles of food and epithelial cells, but we would find something—the dark coloring matter. This is not in ordinary calculus in connection with alveolar abscesses, but in that connected with ulceration. I have sufficiently demonstated to myself that it comes from the blood; therefore, I call it sanguinary calculus. We have in the blood all the material needed for this calculus. This nomenclature is derived in analogy with salivary, biliary, urinary calculus. At the neck of the tooth sanguinary and salivary calculus may touch each other; at the apex they form a distinct line of demarcation. In another case, a short time ago, there was not the slightest amount of salivary calculus, but, one-eighth of an inch below the margin of the gum, a black line of tartar; it came from an ulceration.

Dr. PEIRCE: In alveolar abscess do we not always find the alveolar process more or less broken down?

Dr. INGERSOLL: It has occurred to me that it might be possible that the lime-salts may be derived from the broken-down tissue, but I have seen cases sufficient to warrant me to say that this is not the chief source of the lime-salts.

Dr. PEIRCE: I confirm the statement of Dr. Ingersoll, that the deposit is from the blood and not from the saliva. I have seen cases where there has been no possible connection between saliva and the secretion at the root.

Dr. MORGAN: Have you not found the usual symptoms of Rigg's disease in those cases?

Dr. INGERSOLL: Yes.

Dr. RAWLS:* There may be two ways by which an inflammation can take place within the socket which teeth occupy—from within or from without. The external cause must be a cause that will work from the outside to the inside; the internal cause must be a cause that cuts off all the nutrient circulation, that is based upon want of integrity of the tissue, as results from systemic conditions that favor the

*Nearly verbatim.

least sign of disturbance. It is known where these deposits are found; only at the surface of tissue that are not intact, the surface must be exposed by inflammatory action, or no deposit is made. The valves of the heart and the parenchym of the liver do not have deposits on the inside, but upon the external surfaces, which are made apt by the inflammatory process. I apprehend that Dr. Ingersoll will find that, where he sees sanguinary calculus, and feels sure that it comes from the blood, that there is no entrance to the spot from above, or there may be a small opening. The different degrees of hardness or color are no reason to consider it different from salivary calculus. It is the result of physical action of the tissue, infiltrated or pressed in between the teeth, and I apprehend that this is not one of the results of Rigg's disease. Tissue that is broken down or under a condition to break down, cannot stand in contact with normal pabulum, because of the want of integrity, and not because of any special irritating influence that it will exert locally. The supply of nutrition will be cut short and never reinstated, because, on the one hand, the diseased tissue is not in proper union with the normal tissue; it is disorganized organic material; on the other hand, there is no affinity between the substances that are healthy and those diseased ones with which they are in contact. The local forces at work to destroy this, destroy it with the least possible force; consequently, there can be no possible reunion. We are in the habit of teaching the student and our patients that it is possible to save teeth in such a condition, that there is no probability of it without violating the laws of nature, of physics, of the chemico-physics, of the arrangements which govern our body. We are teaching our patients that we can cause healthy tissue to develop and grow out of the dead substance, the parts of which are not kept in circulation. I would like to ask Drs. Atkinson, Watt, and Prof. Morgan, to bring the thing up whether they agree that there is something in the body that is not material, something not material in the world that surrounds us. I want to know it, if they know anything of a vital force, a superhuman force, that will cause a cure or return to health where there are no physical causes, where there is not a solitary reason, by analogy or otherwise, that such a thing could take place. I want to know whether any man believes in angels or in material substance-contact. I want to know whether the processes discussed to-day are caused by spiritual things, like angels, or by the contact of material substances.

Dr. WATT: I do not know what my young brother has been talk-

ing for the last ten minutes. I am glad he did not hear the remark; it is not important, but I had to try my wind, to see if I had any voice. This question of sanguinary calculus is not very mysterious. We have been stumbling over it just as my friends in West Virginia were stumbling over a valuable mineral. A returned congressman remarked to me that there was nothing good in that reddish crust; it was a nuisance. I said: no, not much; they make shells, guns, locomotives and railroads out of it. "Why you are not talking about that nasty stone?" "Well," I says, "you have been blundering, that is the most valuable iron-ore known, the most profitable in this mountain region." Dr. Ingersoll only gave a name to this sanguinary calculus, but it is an old thing; it is found in all parts of the system. I saw one weighing thirteen ounces imbedded between the abdominal muscles; it was reddish in color, the patient believed it to be a cancer, but it was removed without much difficulty. Dr. Watt believes ammonia to cause the precipitation of dissolved lime-salts in sanguinary and salivary calculus. "You will smell the breath of patients loaded with ammonia." He thinks the ammonia derived from the breaking-down tissues. In breathing through the mouth, the saliva becomes charged with the ammonia.

Dr. INGERSOLL* remarked that the source from which calculus is derived can be traced to the blood. Even all salivary calculus is in the blood before it gets in the saliva.

Dr. BUCKINGHAM* believed in the vis vitæ as the mysterious power emanating from God. For bleaching the teeth he suggested a recipe by Dr. Kirk—sulphite of soda with borax.

Dr. ATKINSON* was sorry that as a body they were getting as crazy and as "Atkinsonian" as himself. They were all troubled by an ignorance of the laws of terminology. What was ulceration but the breaking open of an abscess? What was suppuration but an inflammation, and inflammation an oxydation? Dr. Watt takes things in masses, but we must take them in molecules. He blessed the Lord that the ladies wore their hair long, because they retained all their inspiration. He believed in the vis vitæ, and that all power came from God.

*Short extracts.

THIRD DAY—THURSDAY, AUGUST 3, 1882.

MORNING SESSION.

This session opened at the Highland House at 9.30.

The following additional delegates were reported to the convention: W. O. Kulp, Davenport, Ia.; W. Hart Cameron, Cincinnati; T. W. Brophy, Chicago, Ill.

A paper from Section 6, on Pathology, Therapeutics and Materia Medica was read by Dr. F. M. Odell:*

Dr. ODELL closed:†

It is very well, nay, sometimes imperative, to adapt the treatment to the medication of the prominent symptoms; but in order to radically cure a disease the diathesis must be determined. It is true that in many diseases, like hay-fever, the insult of one organ may be from the tintillating by the pollen of certain plants; but this cause removed, any new accession of dust to the room may serve to perpetuate the impression for days and weeks, until it becomes a cachexia. For the early treatment, we may have drugs; but for a cure, a treatment of the diathesis must be effected. Salicilates will do in one case; in scrofula, some form of mercury would be good, while salicilates would be wasted. I have little faith that salicilate of soda will reduce the temperature, but this is obtained by a combination of salicitate and quinine. A treatment which will reduce the fever from one cause is good to reduce the fever from others. I recommend the use of water, inside and outside, from warm to hot. In hay-fever, the itching sensation may be combatted with hot baths and borax, and the perspiration is obtained by hot water or tea; the temperature is reduced by wearing underwear with large meshes, a contrivance which may assist in keeping the heat in winter and reducing it in summer.

Dr. ATKINSON:‡ We are in what the paper calls molecular metamorphosis, a subject that is known by very few, if any. I have been delighted with the paper; it indicates research, and holds to the mode of motion that we call function. When we deal with remedies, we must remember that remedies must contain affinities for the molecular structure, and to get them in the simplest way we must get them by way of feeding. Every act of health or disease depends upon these hidden movements, and the main trouble here, as in other places, is in regard to what is meant by the terms physiology and pa-

*Unfortunately the short-hand manuscript lacked one page, and we could not find it; somewhere it had got between very many pages of other material.

† Nearly verbatim.

‡ Essentially verbatim.

thology. . . . . *Physiology and pathology are identical;* pathology is only abnormal physiology. If we were resolved into a mere little corporation, giving and asking questions, we would be able to arrive at something that would be a basis, that might be ultimately accepted by this body, that will ultimately give us the alphabet of these functions, so that the ladies can understand it.

Dr. FRIEDRICHS: Do I understand Dr. Atkinson to say that remedies, when being administered, must have molecular affinity?

Dr. ATKINSON: Certainly.

Dr. FRIEDRICHS: There is many a man who actually does know the manner in which medicines act when he administers them; he knows it only by empirical knowledge, from mere observation; but there is no one who knows how it is done or how these results are obtained. I know it is conceded, as far as influence of medicines is concerned, that we are considerably in the dark as to their action, and I can hardly take it for granted that there is molecular affinity in medicines to cure diseases. It seems to me we do not understand each other.

Dr. ATKINSON: When I speak of giving medicines with the food, I mean that the individuals have to be fed upon a substance that must have passed into the condition of dead; but must only have died, and not be effete; hence, must have energy capable of being used. Food may be poison or medicine, by reason of the dissatisfaction of the typal proportion of energy in the tissue that is to be fed or cured, and depend finally on the laws of affinity residing in the atoms. Take the formula H_2O; what do we mean by putting the figure 2. We mean measures of affinities, and in an electric current we get two gases that were combined in H_2O; it is by reason of such affinities that medicines do act.

Dr. FRIEDRICHS: The mere assertion of H_2O proves nothing; the main things ought to be the facts under discussion.

Dr. BUCKINGHAM:* Of matter, as such, we know nothing except its properties. Matter is inert; it only becomes something by the effects it produces. Property is in the atoms; the strongest poison contains the same atoms as food, when these atoms are combined in certain proportion.

Dr. WATT:† These statements of Prof. Buckingham are very lame, and so you will not be surprised to see mine more lame still. Such statements are too general, that we do not know how medicines

*Difficult to hear, extract. †Verbatim.

act, or that we do not know anything about them. Medicine is not a unitary; it is a wonderful complex idea, and we do understand how some act, but do not understand how others act. I know some of you, and it would not do to say, because I do not know all: Dr. Watt is not acquainted with the members. It would not do to assume that medicine is medicine; it is made up of a great variety of individual materials. Take, as a familiar illustration, the treatment of malarial diseases by the use of arsenious acid. It is in medicine as in agriculture, we want to destroy the weed without destroying the useful herbs. In the diseased organism, there is tissue built up under the influence of the ague; it is broken down; it is not as thoroughly alive as healthy tissue; therefore, if we introduce the poison—the arsenical poison—we introduce it just as we put it into our stables to kill the rats; the arsenic kills the morbid tissue because the latter has a lower vitality. The medicine may be so strong as to kill the healthy tissue, too. The emunctories carry out the dead matter; we stink when they come out, but that is the better for us. We stink in order to smell perfumed. Take another example: anaemic girls; they are bloodless, and there may be some reason why they lack red corpuscles; that has to be improved. It has been found out that iron forms an important constituent of the red corpuscles. It is better to furnish the iron in the most assimilable form. If we administer food that contains iron as a part of its constituents, it is easily assimilated; also iron precipitated by hydrogen is very good; it is very finely divided. Some say iron cannot be assimilated, but I know that: If you take the metallic iron and sprinkle it on the bread and butter of an anaemic girl, the red corpuscles form much faster than in her sister, who did not take iron. I found it by experiment, and by analysis I found how it works.

Dr. FRIEDRICHS: I believe that it is simply customary for physicians to do so. The doctor said how arsenic acts, but what is the cause of malaria?

Dr. KULP: Dr. Watt said metallic iron. I have always contended that, in taking medicines, it is necessary for curing to give them in such a form that they are easily assimilated. What was the reason of the improvement in the case of the girl taking metallic iron? The bread and butter? Or was it because in any other form nature would have thrown away the iron?

Dr. F. W. ODELL:* It struck me, after the last speaker, that he made out sufficiently that he did not know anything about the action

*Verbatim.

of medicine, at least, to a certain extent. To a certain extent, we may know the action of medicine; but when it comes to the question underlying that, we come to a point beyond which the *How* cannot be answered. Certain medicines act by assimilation; they must be assimilated to act at all, and thus far we know it; but we only know that the medicine being present, the result follows, and that is empirical. But when we come to the *How*, we have no means of trying the case. Other medicines act by their presence. Take subnitrate of bismuth as an illustration; I do not know if we may call it a medicine, but it is a sort of slattering over the surface of the intestines; we have no assimilation. Dr. Watt stated that the arsenic cured, but he does not say how. I think we can come nearer as to the action of arsenic as a medicine by tests which are within our reach. I think it acts on the nervous system; by the changes in the mode of motion in the nervous system we get a different sort of movements, which enable the system itself to come into the normal train of action. Whether arsenic can kill certain lower forms of life within the system, in the method that he has made out, is to me highly doubtful; it is possible that it may be. In my judgment, it enables the organism to work on the normal state, and thus to get rid of the irritating causes.

Dr. WATT: We know that these substances die under the influence of arsenic, and it gives the organism an opportunity to act by clearing out the debris. We do not know how the plough does pulverize the soil; we only know something about it; compared with others, we know something.

Prof. MAYR: Just about arsenic and its action, let me state a few interesting facts: In my laboratory I had two bottles, covered with vegetable scum or mould, and what do you think these two bottles contained? The one was arsenite of soda and the other was arsenious acid; on none of the other bottles was any scum. Hence, as to the power of arsenic to kill lower organism, I am exceedingly skeptic. I tried to preserve a frog by pouring over it the most concentrated solution of arsenic I had, but in short time it was covered with mould, and thoroughly alive; hence, arsenic does not kill lower organism. I consider the view of Dr. Odell, that arsenic acts by stimulating the nerves to increased activity, as far more probable.

Dr. F. W. ODELL: While we sneer at empiricism, all we know in medicine is empiricism; empiricism is at the foundation of all our knowledge.

Dr. ATKINSON :* We talk of tonics and stimulants without careful distinction, but we can define their action comprehensively. We have all functions made up of molecular movements; there is no such thing as cellular action; all is molecular movements. But there is a mental sense that must perceive the difference between change of the pabulum and imparting of energy, which operates on the mode of molecular motion, whereby it does not combine but awakens energy within it. This is a *stimulant.* Any imparting of substance that is taken into the system, combining with the molecules thereof, becomes a part of the molecules, and is a *tonic.* The tonic is food in every instance. Stimulant is the action inferred by my clear-headed pupil who spoke last. These are a few of the discriminations. We will regard with less reverence the mass of nonsense in pathological works. Every atom has a living and a dead side, that is, a dynamic and a static side. It is doubtful if we can conceive the atom in its dynamic condition; where we trace it, we find it in the sleeping state; and where it is not in sleep, it is dynamism. The power, the energy that is the immediate cause of its motion, we do not know. We do not know anything of causes, only of sequences. We must be careful about things, whether they be food, medicines, or whether they be poison; any one that can act upon the molecules can change the condition of the molecules. A poison is something that has a power to produce a minus action on the molecular movements, or to arrest them.

Dr. FRIEDRICHS: I would like to know any other authority who believes this theory.

Dr. ATKINSON: These statements are of a nature that every one can perceive what is meant.

Dr. DARBY: Some say arsenic acts by catalysis, some say it is absorbent. (Reference is made to the well-known experiments of Dr. Flagg, devitalizing ten pulps with a piece of arsenic that did not lose in weight. A short discussion follows on the well-discussed subject, without any special interest, participated in by Drs. Atkinson, Buckingham, Watt, Kulp, etc.)

Dr. CROZENS: Are we to understand that it is possible that the arsenious acid can be removed and the vitality reëstablished after the vitality has been destroyed, and we find it still at the apex, drilling through?

Dr. ALPORT :† It is very difficult for any one to explain why med-

*Extract. †Verbatim.

icines act; probably the most we can tell is that they act. In regard to the experiments of Dr. Flagg, I wish to say one word. It seems that his ideas are not properly understood. As I understand Dr. Flagg, he wishes to demonstrate that it is not by absorption that arsenic acts, that the destruction of the vitality of the tooth was not from the absorption of material and from chemical action of the material on the material of the pulp, but that the presence of arsenic was sufficient. It acts as an irritant, and, if I remember the experiment correctly, he stated that he left the arsenic in the teeth for a week and found not the slightest trace of arsenic except at the point of contact. I read the articles with great care. The irritation caused a flow of pabulum, but prevented its return, and thus produced strangulation at the apex of the tooth; that is his reason for the destruction of the pulp; it died from the arrest of the circulation of the blood. I gave a good deal of thought to the effect of arsenic at that time. I found this: You take a pulp that is wounded, and it takes the least portion of arsenic to destroy it; you take a pulp that is not wounded, and place the arsenic thus, that the circulation does not carry it into the pulp, and it takes a greater quantity to devitalize it than before. I found also another thing; I have frequently done this: I have put a small quantity of arsenic into a tooth which it would not devitalize. I then took the piece out, and, to my surprise, found a portion of the pulp sloughing off and that portion below remaining healthy, and these teeth remained alive for years afterward. I would not recommend it as a practice, but I believe it to be a fact, and I believe also Dr. Atkinson has found the same thing, that a portion of the pulp sloughed off and the balance remained living.

A paper of Dr. Richardson being referred to the Section, could not be read on account of its length.

Dr. I. N. CROUSE,* chairman of the committee appointed to draft resolutions in memory of the late Dr. M. S. Dean, of Chicago, reported a paper, which was ordered spread on the memorial page of the transactions of the Association. It states that in the sad bereavement they had lost the companionship of one who was original and progressive in thought, though calm and conservative in action, and just and charitable in expressing his convictions, possessing keen perceptions, delicate sensibilities and refined tastes; he was pure, warm-hearted and sympathetic in nature, genial, humorous, witty, and at times even boyish and exuberant in spirits. With these attributes

*From the Cincinnati Gazette.

governing his life, he enjoyed to an unusual degree the confidence and affection of his associates. They had lost a scholarly, cultivated and generous friend, who had filled with honor and great satisfaction every responsible position at their disposal. His brilliant, intellectual attainments, earnest, honest, and modest bearing, made him not less dear to their scientific friends abroad than to themselves. The heart-felt sympathies of the Association were accorded the bereaved family.

Dr. W. C. BARRETT, chairman of Section 7, on Physiology and Etiology, and in reference to a suggestion in the President's address, read: "That the sum of $200 be set apart to be adjudged by a special committee of three members to be appointed by the President of the Association, to the author of the best paper on the etiology of dental caries, the paper to be based upon strictly original investigation, and to be presented to this Association in the report of Section 7. Such committee shall prescribe the conditions upon which essays shall be presented, and in case of two or more papers of equal claim to merit, they may in their discretion divide the sum so set apart and award a portion to each essayist. Unless papers of sufficiently original merit be submitted, the committee may decline to award the prize, and hold it over until it has been fairly earned. The competitors for the prize essay need not be members of this Association, but the profession of the world is invited to the consideration of the subject.

Dr. BARRETT* also read a paper on The Origin of Nervous Force. He said, and endeavored to prove, that it was a correlation of original force—force as it is in general and in its essence. In that sense it was a continuation or a complement of original forces, such as heat, electricity, and, like these, it was derived from the molecular action of chemical affinities. He mentioned an example of his position which he had given recently at a meeting of a State Dental Association. He had exposed the inside organs of a dog—the heart had been bared to view. Soon the beating of the heart ceased, as though life were extinct. Some friends of his had retired and declared that his experiment was a failure. But he said it was not, and applied a shock of electricity, at the same time infusing the proper amount of heat. The result was that the heart began to beat as regularly as before the operation commenced. The scientific research of the day was toward the conservation of nervous force.

*The paper was very exhaustive. The space for this number being already very much taken up, we have to reserve it for one of our next numbers.

The following are the sections assigned for the ensuing year: Artificial Dentistry, Drs. Buckingham, Funderberg, Dorrance, Harroun, J. G. Harper, W. H. Keith; Dental Education, Drs. Crouse, Pierce, Templeton, Shepard, Hart, K. B. Davis, Brophy, Alport, Morrison, W. H. Morgan, Crozens, Thomas, P. G. C. Hunt, C. M. Wright; Dental Literature and Nomenclature, Drs. T. Taft, Atkinson, Friedrichs, Rehwinkel; Operative Dentistry, Drs. Betty, Darby, Kempton, C. J. Keely, George L. Field, Kulp, French, J. P. Wilson, G. F. Nevins, I. Brown, B. G. Marklein, G. W. Smith, Cormany, Goddard, Finley, G. W. Keely, Geo. H. Wilson, Morrison, W. C. Wendell; Pathology, Therapeutics and Materia Medica, Drs. Odell, Harlan, Rawls, O. Arnold, L. C. Ingersoll; Physiology and Etiology, Drs. W. P. Horton, Barrett, E. Hunter, H. A. Smith.

Afternoon Session.*

The afternoon session began at two o'clock, with President H. A. Smith in the chair. The first order of business was the selection of a place for the next annual session. Several names were mentioned, such as Niagara Falls, Nashville, Cleveland, Pittsburg, and Atlanta, Ga. The first two were reported by the committee especially appointed for that purpose. A dentist from Pittsburg recommended that city because it had water works, erected at an expense of $7,000,000, and yet not a drop of water. After three ballotings, Niagara Falls received forty-five votes and Cleveland thirty-six, making the former the choice of the convention. Drs. Rawls and Morgan were appointed tellers.

Following are the officers of the Association elected for the ensuing year: Dr. W. H. Goddard, of Louisville, President; Dr. George J. Friedrichs, of New Orleans, First Vice-President; Dr. E. T. Darby, of Philadelphia, Pa., Second Vice-President; Dr. A. W. Harlan, of Chicago, Ill., Corresponding Secretary; Dr. George H. Cushing, of Chicago, Recording Secretary; Dr. George W. Keely, of Xenia, O., Treasurer. Executive Committee, Dr. F. M. Odell, T. T. Moore, S. G. Perry, C. N. Peirce, W. H. Morgan, F. H. Rehwinkel, Dr. J. N. Crouse, Dr. A. M. Dudley, Dr. G. H. Field.

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*From the Cincinnati Gazette.

FOURTH DAY—THURSDAY, AUGUST 4, 1882.

MORNING SESSION.

This session opened at 9.30 o'clock.

First subject, the resolution of Section 7, to set apart $200 to be adjudged to the author of the best paper upon the Etiology of Dental Caries, etc.

After a long discussion, in which participated Drs. Atkinson, Friedrichs (the latter amending it that he will give $50 himself additionally as an inducement), and Butler in favor, Drs. Taft and Alport against, the President in favor, it was finally adopted. Voted $200.

SECTION I. Artificial Dentistry is called.

Dr. BUCKINGHAM:* *Celluloid* is one subject, and the *practicability* of working single teeth and not in sections, the other. Continuous gums are liable to break, heavy and difficult to make. We have celluloid which answers admirably all requirements as to resemblance. You know that the natural teeth in time are worn off, broken down and differently colored. We should be careful in selecting the proper color for the teeth. If one makes the teeth himself it is very easy: one has nothing to do but to put the proper paint on them and burn them in a muffel. Why, then, can we not, with these two materials, the one that will imitate the gums, the other the teeth, get resemblance to the natural parts? The best kind of people do not like this artificial work, but do not like to give it up. Celluloid is made in the well known manner: It is mixed with small proportion of camphor and a little oxide of zinc and colored with a little vermilion. In order to soften it, it is necessary to heat it. When you heat it to about 212° F., it slightly softens and you can bend it like a piece of wood, but it will go back; at 250°–290° it is still hard; at 290° it becomes doughy, like putty, and can be pressed in any shape. I put some blocks of celluloid in test-tubs and heated them to certain degrees of heat, putting on the top a block of metal. Up to 290° F., you do not perceive any change; at 290° they compress slightly; at 295° they settle down a little; at 300° they begin to take the form of the vessel. Each was ten minutes in the heat. Chemical change and softening are not always the same. At 310° it begins to boil at the bottom, at 320° it becomes porous. The temperature should, therefore, be between 290° and 310°. It will not weld. Two clean surfaces may cohere, but the work should be made on one piece. It is very essential to obtain even heat; glycerine, for instance, may be

*Extract.

eleven degrees hotter in the center than around the edges. (Shows a simple apparatus for heating with dry air.)

Dr. MORGAN: Supposing you make a piece and cast where there are considerable under-cuts; you can remove the celluloid by warming it, and trusting its going back afterwards again; but I make a hollow tin cast by pouring the metal in the plaster, and before it is entirely cooled I pour it out, and thus get a hard inner surface.

Dr. BUCKINGHAM:* I follow the same idea. You obtain hollow casts that can easily be removed by compressing them with a vice, or something of the kind. You all know the great importance of absorption, the importance of the mouth and face retaining its expression and that the nose-muscles have a support and do not fall in. We all know of what importance the expression of the face is, as far as beauty is concerned, and you may pay $100 for a portrait with life in it, but you can also have a portrait for $5. The whole science of the physiognomy is an important science; you know what it is when a man looks good and pleasant: he is then really pleasant. Tell your patients that while they are thinking, their thoughts will be expressed in their countenances. I find it has a very beneficial influence on most mouths.

Dr. DAVENPORT (?): I would like to ask Dr. Buckingham if the coloring matter in celluloid is the same as in red rubber, that is, vermilion, 36 per cent?

Dr. BUCKINGHAM: Red rubber has generally the following proportions: 40 rubber, 24 sulphur and 36 vermilion. Celluloid contains: 100 celluloid, 40 camphor, 2 oxide of zinc and $\frac{6}{10}$ vermilion.

Dr. DAVENPORT (?): What is black rubber? Is it more the natural rubber?

Dr. BUCKINGHAM: Rubber from the tree is like milk; natural rubber is about buff color.

Dr. MORRISON: I would like to ask Prof. Buckingham with regard to the color, if there is anything that will preserve it?

Dr. BUCKINGHAM: I have recently studied about that, but in some mouths it *will* discolor.

Dr. BROPHY: A good deal of loss of color can be avoided by using tin to line the casts. It leaves a better surface, and where you polish it leaves a good polish; that is the secret—the hardness and smoothness which does not absorb and discolor.

Dr. ATKINSON: If we substitute any portion of the lost tissue, it is

*Extract.

desirable that we substitute something conforming in conductivity. There has been a discovery by George F. Reese; it is a gold alloy, and I have a specimen here; it shows to advantage; it has been a satisfaction to me and those who have used it. It is a metal very acceptable to the tissue.

Dr. RICHARDSON (?) :* I did not know anything of Dr. Atkinson's metal. Two years ago I was on a visit to Dr. Taft and my attention was drawn to the subject of plates. I told Dr. Taft that I would lose my patients by continuing to work rubber. Finally I found a metal composed of platinum with a very small proportion of gold, made fibrous, that would adhere to plates as well as paint does to wood. This plate is one that I have worn for two years. Having done this, I found that the metal welded so well that I used it for filling teeth. (Several very fine specimens of fillings are passed.) There is no mercury in these fillings, and it does not tarnish. I have put it up in boxes, and you find it at Mr. Randolph's. As to the temperature, I can only say that if you take cold water, and wear such a plate covered with this metal, you find the same difference as you find ordinarily. I have seen a good many bad mouths, but mine was restored in four weeks after wearing that plate.

Dr. PERKINS :† I have been feeling this morning as I have not been for twenty years the degrading influence of what is going on. I am not accustomed to use strong arguments. I want to speak on this subject. I think that this Association expected transactions by the most eminent men of this country; we expected to hear new things, and to hear the opinions of men who give the very best for our benefit, and what has this been to-day? I have been taught, from the time when I entered a dental office, not to do anything that might degrade the profession; I have been taught that no man can bring mechanical appliances into the Society and speak patronizingly about them and ask us to take them. No Society, from the smallest to the American, would have done that. I find Dr. Atkinson, one of the great lights of the country, coming to advertise his metal! It is in the principle that the wrong lies. One thing in regard to celluloid: I have observed a great many men wearing it, and I find that those who use a great deal of alcoholic liquor cannot use celluloid; I have seen cases where one-half to two-thirds of the plate had been eaten away by the use of alcohol and alcoholic liquors.

(A short discussion of no material importance followed.)

*Nearly verbatim. †Verbatim.

Dr. DORRANCE :* The heat-conducting property of the plate is very necessary. In 211 cases observed by me of partial or full upper plates, 176 were rubber ; 69 (?)per cent. showed the effect in an aggravated degree, 19 in a marked degree and nine nothing ; in three cases there was necrosis and sloughing of the tissue. My estimation of the average time of wearing was two-thirds of a year ; in many cases, there was mechanical insufficiency. My observation of 50 cases in the lower jaw shows that, while some cases were quite as marked, generally the effect was not so extensive. Of the 211 cases, above referred to, 126 have been replaced by metallic gums, and under such treatment nearly all have recovered. Now this number here under treatment may give a fair estimate of the value of the change ; in some cases resetting of the gums, and in all cases relief has followed. These observations show the necessity of conduction as far as they go, and to do justice to the patients who need artificial denture, we must provide them with such as will do them the least injury and secure the best results.

Dr. ALPORT moves that the paper of Dr. Dorrance be printed. Referred to a committee of three.

Dr. DORRANCE :† I have made an alloy composed of equal parts of copper, silver and zinc, and used that as a base for an alloy to solder gold ; I did not consider it as of great importance. I had found from experience with quite a number of students that it is quite difficult for them to get facility in making the alloy ; I made some of the alloy and I happened to find it excellent. I found that, while working excellently, it was open to improvement, and I found that the quantities were not the best proportion that could be used. During the last months I have been experimenting, and found the following : The metals must be pure, free from arsenic. The formula is : 1 part pure silver, 2 parts pure zinc, 3 parts pure copper. The silver need not be pure if you allow for the amount of copper already present, but the other metals must be pure. This solder, of which I have samples for those who have to do with solder and care for it, is very tough ; it gives an excellent flowing solder on brass, and you can make out of it any carat solder for gold ; you can make the color of the solder match the color of the gold which you solder. I have also a silver solder : 12 of silver and 1 part of the alloy, and this solder follows the color of the silver ; it can be made in very small quantities. I have also a blow pipe which I made for a number of

*Paper; short extract. †Almost verbatim.

my friends, which melts half a pound of brass on coal in something over forty seconds.

Dr. BROPHY: Which proportion of the alloy approaches nearest fine gold?

Dr. DORRANCE: I should advise 19 carat gold. The blow-pipe I referred to was made from fifteen to twenty years before Fletcher's, and is very similar in construction.

A motion is made, and strongly favored by Dr. McKellops, of tabulating the skulls in the different collections of the country, in a point of view of dental statistics, to ascertain the degree in which civilization has influenced the decay of teeth, etc. After a short discussion, the subject is dropped for this year.

AFTERNOON SESSION.

Drs. Alport and Atkinson conduct the newly elected president into the chair. President Dr. J. L. Goddard presides the meeting.

Dr. DORRANCE: Little things have helped already a good deal. Not long ago I found something which is known by platers and dealers in platers' supplies as composition; it is probably made of emory crocus and wax in some form, and sold by dealers in these supplies at from sixteen to twenty-five cents a pound; in a depot, it would be seventy-five cents. That, with the use of the felt-wheel on the engine or the lathe, will enable you to dress metal from the very coarsest file to the point ready for the finishing with rouge. It makes a quick cutting polish.

The subject of voting a sum for tabulating the skulls is taken up again, and after some excellent words by Drs. Peirce, Keely, McKellops, Rawls and Brophy, dropped again for lack of funds for this year. The different usual thanks are voted to all except the local newspapers. Short tributes are still paid to Dr. Dean and Dr. Hawxhurst.

Section on Dental Literature.

Dr. TAFT:* Report on Dental Literature. Mentions the new works appearing during last year, chiefly the book of Coleman, revised by Dr. Stellwagen; ten monthly dental journals appeared with from thirty-two to sixty pages, containing a large number of articles of real value to the profession. The British publications make 1692 pages a year, the German 1984, the Italian and Spanish 164, the French 948

*We intend to give a full report in some later number; the space for this number makes it impossible to give it in full.

—in all 4824, against the American 5400 pages a year, so that the latter exceed all the others together.

Prof. MAYR: At this subject I would like to make a few remarks; the French, Italian and Spanish are nothing but a reprint of American and English dental literature; the German are old and fogy. Have any of you read that fine book: Dental Quiz Questions, by Dr. Foster Flagg? I do not know, if he wrote it, or how much he wrote, but it is the funniest book in its line I ever read; if merriment promotes digestion, you ought to read it after dinner; it is a book where it would not make any difference in respect to the sense, if the words were divided differently. I hope that no dental school will adopt it.

Section on Dental Education.

Dr. CROUSE:* We have a short report. Can anything now be said about dental education? Much has been discussed and no standard has been reached as to what constitutes a thorough dentist. Is it to be taken for granted that all dental colleges in existence, and those of the future, are to be considered reputable without consideration? If not, how is a board of examiners to determine which colleges are entitled to representation? With no fixed standard, it is utterly impossible to decide. Some have disputed diplomas from some colleges and recognized those from others much less reputable. All colleges of good standing should form an association fixing the standard. Your section believes the Association should require all colleges to give two full courses of lectures before graduation. If a student should have to spend more time, he would be more benefited; to allow them to graduate in one course is to reduce the quality of our graduates. Can such an association be formed and a two years' course be adopted? Also some other reform ought to be introduced, as the requirement of a good English education and a better training by their preceptors, as recommended in former years. Then, the State board of examiners would have no difficulty to decide which colleges are reputable dental colleges. Another advantage would be the reduction of the number of dental colleges; some of the worthless ones would be discontinued and many of the same class would never come into existence. The sentiment of the best practitioners is that we have too many dental colleges; we have nineteen, counting an embryonic one in Chicago, which is double the number of ten years ago, showing an increase in the number of schools out of all proportion to the increase of students.

*Full extract.

Dr. RICHARDSON: (?) I cannot agree with the speaker that we have not made progress; for in the forty-six years since I began, I can see such a marked progress in every department of dental science that I hardly feel myself in place. One thing a dentist should learn is that he should be an honest man in his education, to himself and his patrons, and he must be imbued with the idea, when patients come to him, that he gives them more than a favor, rather than to adopt the cringing, fawning manner in which many dentists treat their patients to get a job. This ought to be rooted out; we should more stand upon our honor as a calling, and let the public feel that we are conferring a favor upon them by performing the operation. Now, the idea of being jawed down by their saying that they will go to the place where they can have it done the cheapest, is demoralizing to the whole principle of the profession.

Dr. ATKINSON:* It is in vain to attempt to elevate the profession as long as we fall into the old lead. The idea that time has anything to do with the granting of diplomas, is darkness; I hold that any man who can prove that he is competent, ought to be indorsed; one, two or ten years have nothing to do with the acquirement of knowledge; they are only very insignificant. I am informed that there are schools who graduate pupils if they can answer yes or no, and a college in New York gave a diploma to a man who, on being demanded to come up to the requirements, threatened to leave. They ought to be honest first. We have room enough for graduates, but only when the fruit is ripe and not when it is only abundant and green. I take it that men who have the greatest ability are not always literally well educated, but they were men who had reason to comprehend what they were, before they understood what they are doing. It is the moral question that lies at the bottom, that gives us communicants and seekers of truth. That we should attain by the standard of our dental education.

Dr. PEIRCE:* It is indifferent to the public whether a professional man gets his education at one place or another, whether he attend college or not, but it is the ability alone which the public want. Before this idea is adopted, we must have a board of examiners, independent of the teachers; we must have a board beyond the teacher, and that board should have the authority to grant diplomas which entitle a man to practice the profession.

Dr. BARRETT: The idea of placing a diploma upon a man's value,

*Nearly verbatim.

and not the time he has been engaged in school, is a pretty theory! We have that theory in the State of Wisconsin; that is where we come out when it is left to the teachers in the school to determine the qualifications. We will have this state of affairs until the time arrives when the granting of diplomas shall be taken away from the teachers, and a board appointed by some competent authority; until that time comes, some check is necessary against the letting down the bars and opening the field for all manner of fraud.

Dr. ALPORT said that at Chicago no new dental college was forming, only the dentists had established chairs for dental surgery in the colleges of Chicago.

Drs. MORGAN and KULP think it a very dangerous practice.

Dr. BROPHY defends the step.

Close of the meeting.

MERRIMAC VALLEY DENTAL SOCIETY.

The twentieth annual meeting of this Society will be held in Boston, on Thursday and Friday, October 5 and 6, 1882.

The meeting promises to be of unusual interest to the dentists of New England, as many of the leading members of the profession in this country are expected to be present and entertain the company with new and original matter; and, in addition to the regular business of the meeting, the proposition to dissolve the present organization of the Society, and arrange for the organization of a "New England Dental Association," will be discussed—leading members of the profession (non members) from each of the New England States having been specially invited to be present and coöperate with the Society in perfecting arrangements for the reorganization.

A cordial invitation is extended to New England dentists who feel an interest in the matter to be present and lend their aid and influence, should the object meet their approbation.

For Executive Committee,

J. B. COOLIDGE, *Chairman.*

EDITORIAL.

We give our whole number to the publication of the proceedings of the American Dental Association at Cincinnati, Aug. 1–4, 1882. These proceedings do not claim to be a show that we can get a verbatim report; they are intended as a faithful and *interesting* report. To be interesting, we had to throw out here and there parts of the discussions. Some papers had to be left over. To do justice to the speakers, we have marked by foot-notes the degree of verbatim report we have given to a paper or speech. One of the most difficult things to obtain exactly is very often not the speech, but the name of a speaker. We should be glad to receive correction on this point. We marked the cases where the name of the speaker was doubtful to us. We furthermore do not intend to compete with the publication of the proceedings of the American Dental Association which the latter publishes, only these proceedings, appearing so very long time after the meeting, lose much of their freshness, and it is a pity if such a meeting does not get its transactions into print and before the public, ere it is forgotten that dentists met last year. The transactions are far more complete than our report, in which we gave more room to the discussions than to the papers. The work to be done, lying all on the shoulders of one already very busy man, was enormous, considering the short space of time. We have to beg special pardon for overlooking misprints and blunders. We hope they won't interfere with the sense.

We think it useful to give the opinion of two of our editors about that excellent book of Tyndall: "Floating Matter in the Air."

If every dentist applied half as much skill and care mounting a set of artificial teeth as is required to make *the teeth*, there would be less complaint of manufacturers. E.

To Case-harden Iron.—If you desire to harden to any considerable depth, put the article into a crucible with cyanide of potash; cover, and then heat all together; then plunge into water. This process will harden perfectly to the depth of one or two inches.

BIBLIOGRAPHICAL.

FLOATING MATTER IN THE AIR. BY *John Tyndall.* Published by D. Appleton & Co.

The book recapitulates the former well-known experiments of the author to produce "optically empty" air, that is, air so free from dust that a beam of an intense light cannot be seen along its path through such air. He found that one of the means to free the air from such dust was by burning the dust in the air by red-hot platinum wires, or similar heating appliances. The dust in rooms, in a case cited by Tyndall, was 50 per cent. organic, but this probably depends very much on the locality.

Next comes a review of the researches of Pasteur, the well-known French "bacteriologist." It shows that a good chemist may be excellent outside of his proper sphere, because his training makes him very circumspect. A chemist with his sixty elements and numerous compounds has to be continually on the guard against any surprise from them, and he, more than any other branch of sciences, has to do complicated and tedious work to get at the truth and to exclude possible errors. "Here, forsooth, was a chemist rashly quitting his proper *metier* and presuming to lay down the law for the physician and the biologist on a subject which was eminently theirs." (!) But the chemist was right and the empirics in R and Latin empty names were wrong. But the history of Pasteur's discovery is too well known to need relating. The application of the "germ theory," as it is now generally named, that is, the theory which supposes the origin of most contagious and very many other diseases due to the presence of lower organisms, to the treatment of wounds, by Lister, is well known and very interesting to read as it is told in the book.

It is interesting and proved by numerous facts by J. Tyndall, that no kind of filtering and passing the air over sulphuric acid or caustic potash was sufficient to destroy the germs.

Why in that book almost a whole chapter is given to the experiments of a Dr. Bennett, at Edinburg, who shows his incompetence in the single sentence that "air, subject to a boiling temperature, is so expanded as scarcely to merit the name of air, and that it is more or less unfit for the purpose of sustaining animal or vegetable life," we do not quite understand. Air subjected to the boiling point, and allowed to expand, has a density of $\frac{1}{2\frac{7}{3}}$ or about two-thirds of common air.

If we want to obtain air of that degree of rarefaction by ascending a mountain, we find that we have to climb until the barometric pressure is about 500 *mm.* (20 inches), corresponding to about 3,000 *mm.*, or 12,000 feet, which is not as high as the altitude of Quito, South America, with its 100,000 inhabitants, where water boils at about 90° C. (100° F.). A chemist who works under this unwarranted supposition, does not seem to us to deserve the credit of a large part of a chapter.

By accident, Tyndall operated on breath, and found that the last air expirated was optically empty, while the first air breathed out contains many floating particles—Dr. Tyndall supposes from the lungs; we suppose rather the inhaled particles returning to the air, while only in the last particles of air they have been removed by filtering and adhesion to the lung cells.

Many other very interesting little facts are mentioned, but we cannot do anything but recommend very careful reading to every student, and not only the student but every thinking man. About the use of these things, we can only quote Tyndall's words: "What is the practical use of these curiosities if we exclude the interest attached to the observation of new facts and the enhancement of that interest through knowledge that facts often become the exponents of laws; these curiosities are in themselves worth little, ... but they become the antecedents of practical consequences. How does it act not upon a beam of light, but upon our own bodies? . . . ., etc."

How different blood and other tissue comport themselves when kept free from this dust, is shown strikingly by the experiments of Dr. Reklinghausen, of Würzburg, in which blood was kept "*alive*" for three weeks in small cups of porcelain under gas shades, but free from organic particles and dust. The heart of a frog was kept pulsating, removed from the body, more than a week. To obtain pure air for experimenting, the best thing to purify it is to leave it to itself for a sufficient time, in a small, closed chamber or closed vessels. Most interesting is the fact, substantiated by many experiments, that the last air coming from the lungs has lost its power of producing putrefaction.

Tyndall touches the question of "spontaneous generation," and his experiments seem conclusively to disprove other experiments in its favor. His experiments, which must be read in detail, cannot help forcing everybody to acknowledge the infecting power of common air, compared with air that has been allowed to remain at rest.

The last chapter is devoted to spontaneous generation alone. But, while it is very easy to make an extract of a novel, or even of a "paper" on some subject, it is entirely impossible to give anything like an extract from a work teeming with sharp logics and beautiful experiments, every one must read it himself. The importance of a knowledge of the "germ theory" just at present, where the question of chemical decay has been stirred up so mercilessly from its "well settled" state, is so self-evident that no one loving truth and knowledge need be told to read the book of Tyndall. It is not written in a deep, "scientific way"; it is common sense everywhere; it is so that every experiment can be understood by any man able to think.

Why Tyndall generally quotes the French authors in their original tongue, while he has the kindness to translate other authors, is not quite intelligible to us; and though it matters us personally very little, there are many readers who would like to be able to read every passage in a book without being forced to skip something, perhaps very interesting; and there are still, we are astonished to say, some people who do not understand French. The price, in filthy greenbacks, is $1.50, but the value in knowledge and information is more than expressible in these besmeared pieces of green paper, or round, uneven discs of silver alloy.

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The "Germ Theory of Disease" having become so largely the *accepted* theory by the intelligent medical world, and as much interest is being manifested by investigators relative to the presence and effect of organisms in dental caries, it is with unusual pleasure that we call attention to the issue of a volume bearing the above title. A sufficient guarantee of its value is the name of its author. Perhaps a majority of the members of the profession will fail to see how "Floating Matter of the Air" has any connection with dentistry; such, however, do not recognize the fact that there is a growing belief that low organisms have a vast deal to do with the origin and maintenance of decayed teeth, and that no sound views of the etiology of decay can be held, to-day, without taking them into account. Independent of any direct bearing that these essays may have upon the near or remote subject of dentistry, they are full of matter of special interest to every scientific investigator. They embody the results of Prof. Tyndall's systematic and original investigations for several years past, and are presented in a clear, concise and most interesting manner.

The condensed beam of luminous light, which the author has

made use of so extensively in these experiments, constitutes, substantially, a new instrument, and is a powerful supplement to the microscope, revealing a wonderfully interesting world for investigation beyond the microscopical range of our best instruments.

These experiments seem to demonstrate beyond question that *the germinal matter from which Bacteria spring exists in ordinary air.* This, of course, controverts the theory of "spontaneous generation," held by Dr. Bastian and some others, whose experiments, upon which the theory is based, seem to have been faulty, inasmuch as sufficient care was not observed to exclude from his infusions the *germinal* matter of the air—the importance of which had not then been understood, as now appears by the experiments of the author of these essays. Upon this point Prof. Tyndall throws a flood of light. Lengthy and minute though these experiments are, the reader's interest can scarcely tire, or his patience become tired. In fact, one's interest increases as the record is pursued and the great variety of experiments, with tireless pains-taking methods, point so strongly to the discovery of what must be considered as new laws and facts of nature.

That a large proportion of the dust of the air—often more than 50 per cent.—should be proven to be *organic*, or *germinal*, is a somewhat startling revelation. Also the statement that cess-pools, drains, etc., are not sources of *origin* of diseased germs, but rather that they form *favorable conditions* for the *development* of the germs that are found floating in the air, should change simply our theory, not modify our warfare against such places.

After a careful perusal of a series of his experiments, one cannot but regard the author's conclusions, or application, as modest and more than substantial. We can quote but briefly:

"There cannot, I think, be a doubt that the germs in the air differ widely among themselves as regards *preparedness* for development. Some are fresh, others old; some are dry, others moist. Infected by such germs, the same infusion would require different lengths of time to develop Bacterial life. And this remark, I doubt not, applies to the different degrees of rapidity with which epidemic disease affects different people. In some the watching-period—if I may call it such—is long, in some short, the difference depending upon the different degrees of preparedness of the contagium."

. . . . . .

"We have now to look a little more closely at these particles, for-

eign to the atmosphere but floating in it, and proved beyond doubt to be the origin of all the Bacterial life which our experiments have thus far revealed. We must also look at them as they exist in water, in countless multitudes, being as foreign to this medium as the floating atmospheric dust is to the air in which it swims. The existence of the particles is quite as certain as if they could be felt between the fingers, or seen by the naked eye—supposing them to augment in magnitude until they come, not only within range of the microscope, but within range of the unaided senses. Let it be assumed that our knowledge of them, under these circumstances, remains as defective as it is now—that we do not know whether they are germs, particles of dead organic dust, or particles of mineral matter. Suppose a vessel (say a flower-pot) to be at hand filled with nutritious earth, with which we mix our unknown particles, and in forty-eight hours, subsequently, buds and blades of well-defined cresses and grasses appear above the soil; suppose the experiment, when repeated a hundred times, to yield the same unvarying result, What would be our conclusion? Should we regard those living plants as the product either of dead dust, or of mineral particles? or should we regard them as the offspring of living seeds? The reply is unavoidable. We should undoubtedly consider the experiment with the flower-pot as clearing up our preëxisting ignorance; we should regard the fact of their producing cresses and grasses as proof positive that the particles sown in the earth of the pot were the seeds of the plants which have grown from them. It would be simply monstrous to conclude that they had been 'spontaneously generated.'

This reasoning applies, word for word, to the development of *Bacteria* from that floating matter which the electric beam reveals in the air, and in the absence of which no Bacterial life has been generated. I cannot see a flaw in the reasoning; and it is so simple as to render it unlikely that the notion of Bacterial life being developed from dead dust can ever gain currency among the members of the medical profession."

One of the most important of these essays is on "*Fermentation*," in which the author quotes quite largely from the investigations of Pasteur, Koch, Sanderson and others. We have given more space to a notice of this work than usual, because we regard it of vital importance that the dental profession should keep abreast with the advance of scientific discoveries of such a character. The wonder is that such a wealth of information can be placed within reach at so insignificant a sum as the price of this volume. S.

OPERATING TABLE AND LABORATORY.

"WONDERFUL INVENTIONS."

From the "Herald of Dentistry" we learn of another, and *latest*, wonderful invention of the age, through which is proclaimed "Glad Tidings to the Dental Profession."

This "wonderful invention" appears to be a sort of *Golden Calf* to which the profession are very respectfully invited to look, as did the Israelites of old, in their distress; and those who look are assured that they shall be saved. This *modern* wonder, though it has so much of the calf in its appearance, is in reality only a rubber dental plate covered with gold, and those who look thereon will be about as sure of coming to grief as were those of old of receiving life. However, the idol is to be set up, and ere long we shall see many a one *prostrate* before it.

The "glad tidings" will probably be to those *self-styled* dentists who only win success through displayed advertising; and to them such a golden image is truly desirable, being of a nature to induce a credulous public to accept without hesitation. Barnum rightly says: "The public are ever ready to be humbugged." Unfortunately, the irrepressible "P. T." is not the only one who is more than ready to render this willing service.

We know of no man in the profession who can prove conclusively that the ingredients entering into a rubber plate act medicinally on the system of those wearing them. At the same time, however, there is abundant evidence to the fact of evil influence on the mouth from nonconductivity of such plates—the influence in some cases being of so grave a nature that the whole system sympathizes, and the general health becomes greatly impaired.

We would be pleased if the Herald would inform us how this *non*-conductivity is changed to *con*ductivity by plating with gold. In so doing, a new *natural law* would be evolved, far transcending their present claims.

Inventive faculties would be better employed in striving for something of real merit, than in garnishing up old things, which by the means can become only "whited sepulchres, and full of all uncleanness." The *ideal* prosthetic denture has not yet been invented. Let us labor with that in view, and meanwhile use the best at our command.